

What is claimed is:

1. A method for the optical detection of an illuminated specimen in a plurality of detection channels, comprising:  
assigning an upper and/or lower limiting value which is adjustable for at least one channel; and  
changing the channel to be detected with respect to its mode of operation when said limiting value is reached.
2. The method according to claim 1, wherein the detection channel is switched off or its amplification is changed or feedback to the light source is carried out to change the illumination parameters or the signals of the detection channel are not taken into consideration in further processing.
3. The method according to claim 1, including carrying out pointwise illumination and detection.
4. The method according to claim 2, including carrying out pointwise illumination and detection.
5. The method according to claim 1, including carrying out parallel illumination and detection.
6. The method according to claim 2, including carrying out parallel illumination and detection.
7. The method according to claim 5, wherein a microtiter plate is illuminated and detected.
8. The method according to claim 6, wherein a microtiter plate is illuminated and detected.

9. The method according to claim 1, wherein a spectral splitting of the light emitted by the specimen is carried out.

10. The method according to claim 6, wherein a dispersive element is provided followed by a multichannel detector for spectral splitting.

11. The method according to claim 1, wherein illumination is provided by laser light in a laser scanning microscope.

TO BE SO "B F 5 6 8 0